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Environmental Effects of Agricultural Land-Use Change

The Role of Economics and Policy

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Abstract

This report examines evidence on the relationship between agricultural land-use changes, soil productivity, and indicators of environmental sensitivity. If cropland that shifts in and out of production is less productive and more environmentally sensitive than other cropland, policy-induced changes in land use could have production effects that are smaller—and environmental impacts that are greater—than anticipated. To illustrate this possibility, this report examines environmental outcomes stemming from land-use conversion caused by two agricultural programs that others have identified as potentially having important influences on land use and environmental quality: Federal crop insurance subsidies and the Conservation Reserve Program (CRP), the Nation's largest cropland retirement program. The report finds that lands moving between cultivated cropland and less intensive agricultural uses are, on average, less productive and more vulnerable to erosion than other cultivated lands, both nationally and locally. These lands are also associated with greater potential nutrient runoff and leaching compared with cultivated cropland nationally. Crop insurance subsidies and CRP have estimated effects on erosion and other environmental factors that are disproportionate to the acreage and production effects, but specific environmental impacts vary with the features of each program.

Keywords: Conservation Reserve Program (CRP), crop insurance, erosion, extensive margin, farm policy, imperiled species, land use, land-use change, land quality, nutrient loss, soil productivity.

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